Oregon
Kate Brown, Governor

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July 14, 2016

Mr. Robert J. Wyatt
NW Natural
220 NW Second Avenue
Portland, OR 97209

RE: Final Stormwater Source Control Data Summary Report, NW Natural "Gasco" Site
Portland, Oregon - ECSI# 84

Dear Bob:

The Department of Environmental Quality (DEQ) reviewed the "Final Stormwater Source Control Data Summary Report, NW Natural Gasco Site" dated September 2010 (Data Summary Report). The Data Summary Report presents the results of NW Natural's work to assess the potential for discharges of hazardous substances from the Gasco Site stormwater system to cause or contribute to adverse impacts of the Willamette River and its sediments. The document also provides NW Natural's conclusions as to whether or not stormwater source control measures (SCMs) are necessary to prevent or mitigate potential impacts. Anchor QEA, LLC (Anchor QEA) prepared the Data Summary Report on behalf of NW Natural.

Based on our review of the Data Summary Report, DEQ concludes:

- There is insufficient information to make a source control decision regarding stormwater discharges from the entire site;
- Updated information is needed regarding all stormwater discharges under permits, evaluation of monitoring data, reconfiguration activities and current operations throughout the site;
- Additional data collection is needed to complete the stormwater source control evaluation, including evaluations of active outfalls not addressed in the report (i.e., WR-285 & WR-467) and data/observations regarding large portions of the site where infiltration or overland flow occur;
- Stormwater characterization, control or infrastructure decommissioning is needed in Area A to prevent mobilization of contaminants to Doane Creek, either directly or via offsite City of Portland stormwater infrastructure; and
- Current lines of evidence indicate that further evaluation of potential sources in Area D and Area E should be conducted and that stormwater source control measures (SCMs) are warranted in portions of the site investigated.

The bases for DEQ's conclusions are provided as the comments below. NW Natural should submit a work plan for DEQ's review and approval that addresses our comments below. Subsequent to completing this proposed work, NW Natural should prepare a Draft Stormwater Source Control Evaluation Report, which includes information from the Data Summary Report and fully incorporates all new information and supporting documentation. The report should include a proposal for

implementation of additional source control measures, as warranted, along with performance monitoring to demonstrate effectiveness.

COMMENTS

1. The report discusses stormwater discharges from the site through one outfall, referred to as SW-1 or WR-107, as well as minimal overland flow discharges. A complete understanding of the fate of all stormwater entering and leaving the site is needed for a comprehensive evaluation.
    a. NPDES individual discharge permit #103061 was issued in 2013 covering discharge through a diffuser located on the floating dock of treated groundwater extracted along shoreline of the Gasco Site and northern Siltronic Site, and stormwater from the LNG containment area (Area B). Please update the maps and report information to show/discuss the current configuration and evaluation of monitoring data from this discharge.
    b. The Anchor QEA October 3, 2013 Figure 1: "Map of In-Water and Upland Structures" (attached) indicates that two additional active outfalls (WR-285 & WR-467) discharge stormwater behind the floating dock in the north end of the property. Additional information is requested on the stormwater system design related to these outfalls and any other undisclosed features. A decision will be made on whether sampling is needed to characterize the system solids and stormwater associated with these outfalls, and any other undisclosed site features, once DEQ receives and reviews this information.
    c. Areas A and D operate under separate discharge permits and have reportedly undergone changes in operations and discharges since the 2010 report. Please provide a summary of past and current permitted discharges, including discharge locations and evaluation of all available monitoring data.
    d. Area C makes up more than one half the site, includes riverbank pavement and compacted gravel areas and is reported to infiltrate or flow over the bank to the river. No evidence demonstrating infiltration or overland flow of stormwater in these areas is presented. Photo documentation, observations during saturated soil conditions (mid-winter to spring), infiltration testing results or other information is needed to clarify the fate of stormwater in these areas.
    e. The comprehensive map should be improved and updated to clearly show all stormwater flow paths, treatment and conveyance features, infiltration areas and other features.

2. DEQ compared the stormwater and solids data reported to the Portland Harbor screening level values (SLVs) from Table 3-1 of the EPA/DEQ "Portland Harbor Joint Source Control Strategy" (September 2005), as well as to the curves in the Appendix E tool of DEQ's "Guidance for Evaluating the Stormwater Pathway at Upland Sites," (January 2009 [updated October 2010]), which presents measured concentrations of typical contaminants from heavy industrial sites in the Portland Harbor uplands in rank-order. Catch basin samples throughout the site showed elevated concentrations of multiple parameters as follows:
    a. Cadmium (Cd) exceeded the SLV at D1 and D2 and was well above the knee of the rank-order curve at A4 (exceeded chart concentration range)
    b. Lead (Pb) exceeded the SLV at D1, D2 and A4 and was in the knee of the curve at D1
    c. Mercury (Hg) exceeded the SLV at D1 and A4 and is in the upper part of the knee of the curve at A4
    d. Nickel (Ni) exceeded the SLV at D1
    e. Zinc (Zn) exceeded the SLV at D2

f. Polychlorinated biphenyls (PCBs) appear to significantly exceed SLVs (MDLs were too high) and are well above the knee of the curve at all catch basins (E2 does not exceed the curve)
g. Bis(2-ethylhexyl)phthalate (BEHP) exceeds the SLV and is in the knee of the curve at D2

3. All data presented in the stormwater source control evaluation report will need to be compared to EPA's preliminary remediation goals (PRGs) for Portland Harbor, supplemented by Table 3-1 for constituents not list in the PRG tables.

4. With the exception of catch basins SS-A3 and SS-A4, stormwater from the Kopper's lease area (Area A) is currently discharged to the sanitary sewer under a permit which expires in 2019. Stormwater from the SS-A3 and SS-A4 areas potentially discharge to Doane Creek, either directly through SW-2 or via interception in off-site City of Portland stormwater conveyances. While catch basin solids from SS-A3 were not tested, solids from SS-A4 showed elevated concentrations of contaminants. Controls may be warranted and additional information is needed as to how stormwater from Area 3 will be managed to prevent mobilization of contaminants to Doane Creek. Please include plans for managing discharges to sanitary in the event a permit for sanitary discharge is not renewed and documentation showing that any reconfiguration or system component abandonment is consistent with City of Portland requirements.

5. The stormwater evaluation includes the results of analyzing stormwater samples from Outfall WR-107. This outfall receives runoff from areas D and E which represent only a small portion of runoff from the site.
    a. DEQ notes that stormwater sampling at WR-107 did not meet protocols for the 11/9/09 and 11/20/09 events, in that there was not an antecedent dry period and sampling appears to have occurred 4 and 8 hrs into the storms. While the text does not note when flow began on site, it appears that these results would be biased low. Even so, the following exceedances were found:
        i. Cyanide above the SLV on 11/9/09, 11/20/09, and 2/10/10
        ii. Polycyclic aromatic hydrocarbons (PAHs) well above the knee of the curve in all storms
        iii. PCBs above the knee of the curve in all storms (with MDLs too high)
    b. The contaminants exceeding SLVs and rank-order curves in stormwater and catch basins solids (with the exception of BEHP) are also found at elevated concentrations in sediment just off-shore of the facility, where stormwater discharges into EPA's sediment Area of Potential Concern 9U. Based on this information, SCMs are warranted to prevent recontamination of EPA's eventual remedy and unacceptable risk to in-water receptors in the river.
    c. The many exceedances above the knee of the rank-order curves in Area D indicate source investigation and control is warranted. While the source control evaluation did not include the Pacific Terminal Services/Fuel and Marine Marketing 1200Z permit data (covering discharges from the lease area through WR-107), review of the 2012-2014 data (monitoring waiver results in no permit data after 2014) indicate that Cd, Ni, PAHs and PCBs (though MDLs are high) are above the flat part of the rank-order curves, confirming the need for SCMs in Area D. Past and current monitoring reported for the 1200Z permitted discharges should be included in future evaluations and reports.

d. Additional investigation of Area E is also warranted to identify possible sources, as stormwater from Area E likely contributes to elevated stormwater contaminant levels at WR-107.

6. The report notes that during periods of heavy rain, it is likely that some stormwater in the northeastern portion of the site flows overland to the Willamette River. As noted in the report, DEQ agreed that stormwater source control from this portion of the site could be integrated into the design of the riverbank source control measures. Depending on the contamination present in soils in this area, and the volume and frequency of overland flow to the river, interim stormwater control measures may be necessary, which could become permanent depending on the final riverbank design.

7. Groundwater elevations in comparison to stormwater and other pipelines traversing the site should be evaluated, along with observations in storm pipes of any dry-weather flow, as a first step in investigating the potential for there to be preferential pathways for groundwater to migrate to the river.

NEXT STEPS

DEQ acknowledges that stormwater source control work at the site has been delayed to facilitate investigation and implementation of substantial SCMs for the high priority groundwater contaminant transport pathway(s) from the site to the river. As the high priority work has moved forward, and with EPA's recent issuance of the "Proposed Cleanup Plan for the Portland Harbor Superfund Site" (June 2016) for the Willamette River, it is important to complete source control work to prevent recontamination of the eventual remedy and unacceptable risk to in-river receptors.

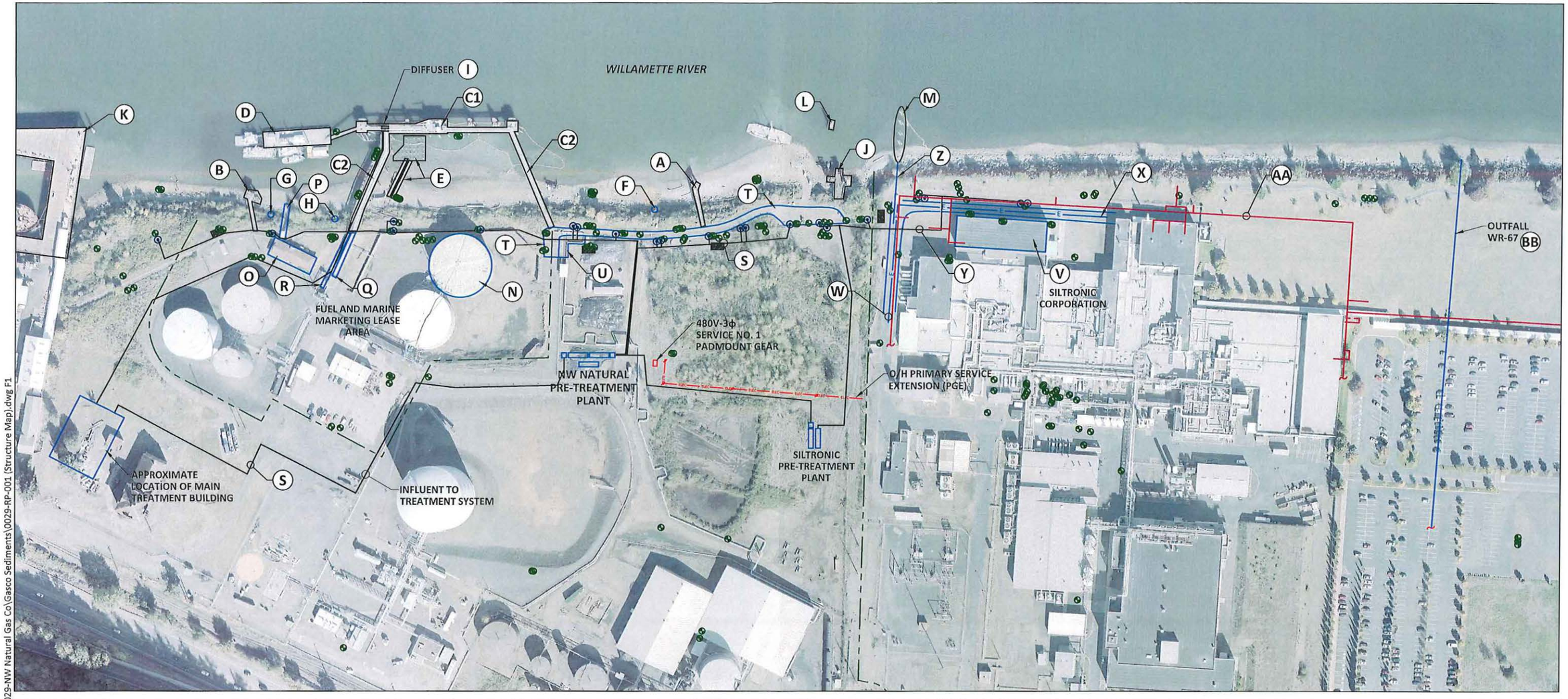
I am available to meet with NW Natural to review and discuss preparation of a work plan and schedule for resolving DEQ's comments and to bring the stormwater source control evaluation to completion. Please contact me with questions regarding this letter and to schedule a meeting at NW Natural's earliest convenience. I can be reached at liverman.alex@deq.state.or.us or 503-229-5080 or at the address on this letterhead.

Sincerely,

L. Alexandra Liverman
Portland Harbor Stormwater Coordinator

Attachment: Anchor QEA 2013 map

cc: Patty Dost, Pearl Legal Group
Ben Hung, Anchor
David Gillingham, Anchor
John Edwards, Anchor
John Renda, Anchor
Carl Stivers, Anchor
Rob Ede, Hahn and Associates, Inc.
Myron Burr, Siltonic
Kim Cox, City of Portland
Laura Johnson, City of Portland
Eva DeMaria, EPA
Sean Sheldrake, EPA
Lance Peterson, EPA
Dana Bayuk, DEQ
ECSI #84 File



LEGEND:

- A Upriver Pile-Supported Catwalk
- B Downriver Pile-Supported Catwalk
- C1 Gasco Pile-Supported Dock - Channelward Extents
- C2 Gasco Pile-Supported Dock - Nearshore Extents
- D Gasco Floating Dock
- E Former Dock Timber Pilings
- F Gasco Active Outfall WR-107
- G Gasco Active Outfall WR-285
- H Gasco Active Outfall WR-467
- I HC&C Discharge Pipeline and Diffuser Arrangement
- J Former Upriver Dock
- K US Mooring Dock
- L Upriver Gasco Dolphin
- M Siltronic Combined Outfall and Protective Timber Piles
- N FAMM Fuel Storage Tank
- O FAMM Office Building
- P FAMM Boom Deployment Slide
- Q FAMM Fuel Pipeline
- R HC&C Discharge Pipeline
- S HC&C Extraction System Components
- Source Control Main Pipeline Route
- Control Panels, Compressors, Programmable Logic Controllers
- Existing Monitoring Well, Observation Well, or Piezometer
- Existing Extraction Well
- T Upriver Gravel Access Road
- U Koppers Pencil Pitch Pipeline
- V Fab 1 Building
- W Paved Access Road
- X 15kV Electrical Line
- Y HC&C Extraction System Components
- Z Combined Outfall
- AA Plant Fire Suppression System
- BB Active Siltronic Outfall WR-67

0 200
Scale in Feet

HORIZONTAL DATUM: Oregon State Plane North NAD 83 (International Feet).

VERTICAL DATUM: City of Portland

NOTE: Drawing prepared from CAD file provided by Advanced Remediation Technologies Co, dated January 5, 2012.

K:\Projects\0029-NW Natural Gas Co\Gasco Sediments\0029-RP-001 (Structure Map).dwg F1
Oct 03, 2013 2:38pm heriksen

ANCHOR QEA

Figure 1
Map of In-Water and Upland Structures
Substantial Product Accessibility Analysis
Gasco Sediments Cleanup Action